Table 2b-Database Summary Review Table of the Non Acquisition REC Properties

FIGURE 7 PAGE NUMBER	FIGURE 7 DESIGNATION NUMBER	FIGURE 8 PAGE NUMBER	PROPERTY NAME	PROPERTY ADDRESS	PROPERTY USE/TYPE OF BUSINESS	DATABASE	APPROXIMATE CLOSEST DISTANCE FROM THE FREEWAY (FT)	ADJACENT TO THE SITE/STREET IMPROVEMENT	MEDIA AFFECTED	CONTAMINANT	SITE STATUS
7-17	24	8-17	SEAL BEACH NAVAL WEAPONS STATION	800 SEAL BEACH BLVD. SEAL BEACH, CA 90740	MILITARY SITE	MILITARY CLEANUP SITE	2000-5000	NO	AQUIFER USED FOR DRINKING WATER SUPPLY, OTHER GROUNDWATER (USES OTHER THAN DRINKING WATER), SOIL	CHLORINATED HYDROCARBONS, TRICHLOROETHYLENE (TCE), DIESEL,	CASE IS OPEN. SOIL AND GROUNDWATER CONTAMINATION. ACTIVE AS OF 5/1/1986. SEAL BEACH NAVAL WEAPONS STATION IS A WEAPONS AND AMMUNITION STORAGE,DISBURSING, AND RECONDITIONING BASE FOR THE UNITED STATES NAVY. 56 SITES WERE INVESTIGATED FOR POSSIBLE CONTAMINATION. CONTAMINANTS INCLUDE ACIDS, ALKALINES, EXPLOSIVES, WASTE OILS, POLYCHLORINATED BIPHENYLS (PCBS), FUELS, SOLVENTS, PAINT THINNERS, ASBESTOS, MERCURY, VOLATILE ORGANIC COMPOUNDS (VOCS), HEAVY METALS, OIL DRILLING FLUIDS, AND PAINT WASTES.SUSPECTED AREAS OF CONTAMINATION INCLUDE: WASTE WATER SETTLING AND EVAPORATION PONDS, EXPLOSIVES BURNING AREAS, STATION LAND- FILLS, SANDBLAST GRIT DISPOSAL AREA, PESTICIDE STORAGE TRAILER, NASA ISLAND, DIESEL FUEL SPILL AREA, PRIMER SALVAGE YARD AREAS, MERCURY SPILL AREAS, DISPOSAL PIT, OIL ISLAND, FOAM TESTING FIRE TRAINING AREA, SOLVENT DISPOSAL ARES, AND FORMER WASTE FUEL STORAGE AREA. NUMEROUS HAZ WASTE OPERATIONS AND REMEDIATION SITES LISTED UNDER ENVIROSTOR DATA BASE CONTAMINATING BOTH GROUNDWATER AND SOIL. THE COORDINATES OF THE HAZ WASTE SITES INDICATE THAT THEY ARE LOCATED AT LEAST 0.5 MILE SOUTH OF THE SITE. SEVERAL LUST CASES WERE AVAILABLE, AND THEY WERE ALL LOCATED MORE THAN 1 MILE SOUTH OF THE SITE ALIGNMENT. BASED ON THE LONG HISTORY USE OF THE DOD FACILITIES IT SHOULD BE ASSUMED THAT THE RESIDUAL GROUNDWATER CONTAMINATION WOULD REPRESENT AN REC.

Table 2b-Database Summary Review Table of the Non Acquisition REC Properties

FIGURE 7 PAGE NUMBER	FIGURE 7 DESIGNATION NUMBER	FIGURE 8 PAGE NUMBER	PROPERTY NAME	PROPERTY ADDRESS	PROPERTY USE/TYPE OF BUSINESS	DATABASE	APPROXIMATE CLOSEST DISTANCE FROM THE FREEWAY (FT)	ADJACENT TO THE SITE/STREET IMPROVEMENT	MEDIA AFFECTED	CONTAMINANT	SITE STATUS
7-16	25	8-16	LOS ALAMITOS JOINT FORCES JOINT FORCES TRAINING BASE, LOS ALAMITOS, INSTALLATION RESTORATION PROGRAM ARMED FORCES RESERVE CENTER	LEXINGTON STREET LOS ALAMITOS, CA 90720-5001 ORANGE COUNTY	MILITARY SITE	MILITARY CLEANUP SITE	1500-3000	NO	SOIL, AQUIFER USED FOR DRINKING WATER SUP	ARSENIC, AVIATION, BENZENE, DIESEL, DIOXIN / FURANS, FUEL OXYGENATES, GASOLINE, HEATING OIL / FUEL OIL, LEAD, OTHER CHLORINATED HYDROCARBONS, OTHER METAL, POLYCHLORINATED BIPHENYLS (PCBS), POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS), TETRACHLOROETHYLENE (PCE), TOLUENE, TRICHLOROETHYLENE (TCE), WASTE OIL / MOTOR / HYDRAULIC / LUBRICATING, XYLENE	CASE OS OPEN. SOIL AND GROUNDWATER CONTAMINATION. REOPEN CASE AS OF 2/1/2007 . THE PROPERTY IS LOCATED MORE THAN ¼ MILE NORTH OF THE SITE IMPROVEMENTS. DUE TO ITS DISTANCE FROM THE SITE THE SOIL CONTAMINATION IS NOT AN ISSUE. BASED ON THE LONG HISTORY USE OF THE DOD FACILITIES IT SHOULD BE ASSUMED THAT THE RESIDUAL GROUNDWATER CONTAMINATION WOULD REPRESENT AN REC TO THE SITE.
7-16	26	8-16	COLLEGE PARK MOBILE	4000 LAMPSON, SEAL BEACH, CA	GAS STATION	LUST	500	NO	AQUIFER USED FOR DRINKING WATER SUPPLY	GASOLINE	CASE IS OPEN - SITE ASSESSMENT AS OF 7/10/2003. 2 WELLS MONITORED QUARTERLY. THE LUST IS LOCATED NORTH OF THE SITE IMPROVEMENTS GROUNDWATER WITHIN THE SITE IMPROVEMENT LIMITS MAY BE IMPACTED BY THIS CONTAMINATION. POTENTIAL IMPACT TO THE SITE GROUNDWATER IS AN REC TO THE SITE.

Table 2b-Database Summary Review Table of the Non Acquisition REC Properties

FIGURE 7 PAGE NUMBER	FIGURE 7 DESIGNATION NUMBER	FIGURE 8 PAGE NUMBER	PROPERTY NAME	PROPERTY ADDRESS	PROPERTY USE/TYPE OF BUSINESS	DATABASE	APPROXIMATE CLOSEST DISTANCE FROM THE FREEWAY (FT)	ADJACENT TO THE SITE/STREET IMPROVEMENT	MEDIA AFFECTED	CONTAMINANT	SITE STATUS
7-17	27	8-17	ARCO #3038	12800 SEAL BEACH SEAL BEACH, CA 90740	GAS STATION	LUST	600	NO	AQUIFER USED FOR DRINKING WATER SUPPLY	GASOLINE	CASE IS OPEN AS OF 4/24/2009 FOR GROUNDWATER MONITORING. THE AREA OF INFLUENCE OF SOIL CONTAMINATION IS WITHIN THE PROPERTY LIMITS AND DOES NOT ENCROACH IN THE ADJACENT STREETS. THE SOIL CONTAMINATION WAS CLEANED. DUE TO ITS DISTANCE FROM THE SITE THE SOIL CONTAMINATION IS NOT AN ISSUE. POTENTIAL IMPACT TO THE SITE GROUNDWATER IS AN REC TO THE SITE.
7-18	28	8-18	NB I-405 S OF I-605 DIESEL SPILL	FREEWAY LANE AND POSSIBLY SHOULDER NB I-405 S OF I-605	CALTRANS SHOULDER	ERNS, CHMIRS	0	YES	SOIL	GASOLINE	SOIL CONTAMINATION. THERE ARE NO RECORDS OF SITE CLEANUP. NO ADDITIONAL RECORDS WERE AVAILABLE. IT SHOULD BE ASSUMED THAT THE SOIL IN THE AREA IS IMPACTED BY THIS RELEASE. POTENTIAL REC TO THE SITE.
7-22	29	8-22	TOSCO - 76 STATION #3768	6370 STEARNS ST E - LONG BEACH, CA 90815	GAS STATION	LUST	290	NO	AQUIFER USED FOR DRINKING WATER SUP	GASOLINE	CASE IS OPEN. REMEDIATION IS IN PROGRESS AS OF 4/14/2008 . 26 WELLS IS MONITORED SEMI-ANNUALLY. GROUNDWATER IMPACTED ABOVE BACKGROUND - UP TO 32,000 UG/L OF MTBE DETECTED ONSITE. POTENTIAL IMPACT TO THE SITE GROUNDWATER IS AN REC TO THE SITE.

Table 2b-Database Summary Review Table of the Non Acquisition REC Properties

FIGURE 7 PAGE NUMBER	FIGURE 7 DESIGNATION NUMBER	FIGURE 8 PAGE NUMBER	PROPERTY NAME	PROPERTY ADDRESS	PROPERTY USE/TYPE OF BUSINESS	DATABASE	APPROXIMATE CLOSEST DISTANCE FROM THE FREEWAY (FT)	ADJACENT TO THE SITE/STREET IMPROVEMENT	MEDIA AFFECTED	CONTAMINANT	SITE STATUS
7-22	30	8-22	PALOS VERDE CLEANERS	2221 PALO VERDE - LONG BEACH, CA 90815	DRY CLEANERS	RCRA-SQG, FINDS, HAZNET, SLIC, DRYCLEANERS	300	NO	SOIL, GROUNDWATER	PET, VOC	CASE IS OPEN. SOIL AND GROUNDWATER CONTAMINATION. VERIFICATION MONITORING IS IN PROGRESS AS OF 6/30/2000 . NO FURTHER ACTION FOR SOIL SINCE 2001. DUE TO DECLINING PCE IN MONITORED WATER A GW LOW RISK CLOSURE WAS REQUESTED IN 2009, STILL NOT APPROVED. A POTENTIAL IMPACT TO THE SITE GROUNDWATER IS AN REC TO THE SITE.
7-20	31	8-20	CALIFORNIA TARGET (MATTHEWS SERVICE STATION)	11804 CARSON ST E - HAWAIIAN GARDENS, CA 90716	OIL CHANGE STATION	LUST, HIST CORTESE	1360	NO	AQUIFER USED FOR DRINKING WATER SUP	GASOLINE	CASE IS OPEN. GROUNDWATER WAS IMPACTED,EXTENT OF CONTAMINATION HAS NOT BEEN DETERMINED - ADDITIONAL GROUNDWATER ASSESSMENT IS NECESSARY. CLEANUP GOAL - ELEVATED LEVELS OF HC CONC. ARE PRESENT IN GROUNDWATER. POTENTIAL IMPACT TO THE SITE GROUNDWATER IS AN REC TO THE SITE.
7-20	32	8-20	TOSCO - 76 STATION #5708	11807 CARSON ST E - HAWAIIAN GARDENS, CA 90716	GAS STATION	LUST	1360	NO	AQUIFER USED FOR DRINKING WATER SUP	GASOLINE	CASE OPEN. GROUNDWATER IMPACTED. CLEANUP GOAL - ELEVATED TPH-G, BENZENE, AND MTBE. QUARTERLY MONITORING NEEDED. POTENTIAL IMPACT TO THE SITE GROUNDWATER IS AN REC TO THE SITE.
7-20	33	8-20	SHELL #204-4155-1106	11761 CARSON ST E - LAKEWOOD, CA 90715	GAS STATION	LUST, HIST CORTESE	1375	NO	AQUIFER USED FOR DRINKING WATER SUP	GASOLINE	CASE IS OPEN. GROUNDWATER CONTAMINATION. 11 WELLS ARE MONITORED SEMI-ANNUALLY STARTING IN JUNE 2009. POTENTIAL IMPACT TO THE SITE GROUNDWATER IS AN REC TO THE SITE.

6.0 PHYSICAL SETTING SOURCE(S)

6.1 REGIONAL GEOLOGY

The Site is generally in the Orange County portion of the Central Block within the Los Angeles Basin. This portion of Orange County is part of the Peninsular Range Geomorphic Province of California. The Central Block is part of a large syncline that includes up to 32,000+ feet of Late Cretaceous to Pleistocene and Recent sediments. The basement complex below the sedimentary deposits is made of Mesozoic crystalline rock types. The sedimentary deposits consist of marine and non-marine clastic strata with some volcanic flows and breccia of the Mid-Miocene. Along the Newport-Inglewood Fault Zone (NIFZ), the southern boundary of the Central Block has a sub-sea depth of 14,000 feet of sedimentation. Within the basin, folding and faulting are present. Many of the known oil fields in the basin are associated with folds and faults along the edge of the basin.

6.2 LOCAL GEOLOGY

Structurally, most of the Orange County coastal plain is underlain by the broad, northwest-plunging synclinal Los Angeles Basin, which contains up to 4,200 feet of relatively unconsolidated Pleistocene marine and non-marine sediments (Greenwood, 1980b) and up to 170 feet of unconsolidated non-marine sediments (Fuller, 1980a). The mapped units along the I-405 corridor are mostly younger alluvium associated with the lowlands of the San Gabriel River and Santa Ana River – some alluvium and others floodplain deposits. These deposits consist of loose sand, silt, and clay; for a visual representation, see Figure 3, Quaternary Geology Map, located at the end of this report.

The I-405 alignment from the SR-73 interchange to the Santa Ana River skirts to the north of an older elevated alluvium terrace. This terrace to the south consists of dense silt, sand and gravel with some erosional rubble. The older alluvium terrace could be shallow below thin younger alluvium deposits below the I-405 alignment.

In the central to northwestern portion of the I-405 alignment, the soils consist of young alluvial flood plain deposits derived from the flooding of the ancient Santa Ana River during Late Pleistocene and Recent times. Below the surficial sediments, the Palos Verdes Sand, unnamed Pleistocene Deposits and the upper-most portion of the San Pedro Formation is present. These three geological units and formation are Pleistocene water bearing units above the Silverado water bearing unit.

6.3 GENERAL HYDROGEOLOGIC CONDITIONS

The Orange County Basin is located in north and central Orange County within the lower Santa Ana River watershed (DWR, 2007). The Orange County Basin is bounded by the Coyote and Chino Hills to the north, the Santa Ana Mountains to the northeast, the San Joaquin Hills to the south, and the Pacific Ocean and the NIFZ to the southwest. The Orange County Basin is separated from the Central Basin along Coyote Creek and the Orange County line, although there is no physical barrier between the two basins. The NIFZ acts as a complete barrier to flow from the ocean along most of its length in Orange County except at ancient river crossing gaps, most notably the Alamitos Gap along the Los Angeles County line and the Talbert Gap in Huntington Beach and Costa Mesa. At these two locations, permeable river deposits cross the fault barrier providing the opportunity for seawater to flow into the Orange County Basin; for a visual representation, see Figure 4 located at the end of this report.

The study corridor area is within the Main subbasin area of the Orange County Basin. This subbasin is one of three within the Orange County Basin. Water from the other two subbasins flows into the main subbasin – southwards from the Yorba Linda subbasin and westerly from the Irvine subbasin.

The hydrogeology of the Orange County Basin is characterized by a deep structural alluvial basin containing a thick accumulation of inter-bedded sand, silt and clay. This is expected for the Main subbasin as it lies between the San Gabriel River to the north and the Santa Ana River to the south. The upper aquifer system of the main subbasin averages approximately 200 feet in thickness and consists of alluvial sediments that include the Talbert aquifer and recent alluvium. Generally this aquifer is not used as a water supply source but the deeper aquifers in the Basin are used for water supply.

To protect the fresh groundwater in the basin from seawater intrusion, Orange County Water District (OCWD) and Los Angeles County Department of Public Works (LACDPW) inject purchased and recycled water into the Talbert (38 wells) and Alamitos barriers (43 wells), see Figure 4.

6.4 GROUNDWATER LEVELS

The shallow groundwater along the study corridor is about 15 feet below the adjacent ground in the area; see Figure 5 for groundwater levels in Orange County, and Figure 6 for historically highest groundwater level contours along the freeway corridor. This water is mostly a perched condition in the shallow alluvium of the area but may be semi-confined in isolated areas. The sandy soil gets replenished by infiltration of rain and irrigation waters. The sand is known to follow the surface topography grading

down the topography to the coast. The water of the perched to semi-confined zone is not potable for drinking without purification but has been withdrawn using small capacity pumps and used for irrigation and industrial use. This unconfined sand is prevented from percolating to the lower fresh water zones by silt or clay barriers.

The groundwater flow is variable and dependent on local conditions along the corridor. However, for the most part the water is expected to flow regionally towards the ocean or nearby drainages. The groundwater level in the study area ranged from 50 feet to 80 feet Mean Sea Level (MSL) in 2002, and rose to 30 feet to 50 feet MSL in 2005. Based on the historically highest groundwater level map, historically highest groundwater levels varies from 5 to 30 feet bgs along the I-405 alignment.

7.0 HISTORICAL USE INFORMATION ON THE SITE

GDC reviewed available information in order to ascertain the historical uses of the site. Review references primarily were the city directories, historic aerial photographs and topographic maps.

7.1 CITY DIRECTORIES

The site is a public thoroughfare and there are no businesses or addresses for the site. Review of city directories is not pertinent for this assessment.

Once the list of the ROW acquisition properties is finalized the specific parcels may need to be researched for past use by reviewing the city directory records. No city directory records were reviewed for this assessment.

7.2 AERIAL PHOTOGRAPHY REVIEW

Aerial photographs were reviewed for eight decades - 1938, 1947, 1953, 1968, 1977, 1989-90, 1994-95, and 2002. The photographs were provided in segments along the route, and for most flights the route was in eight segments. In some flights the route was in 7 segments and in others the route was in nine segments, depending on the flight completed for that year. In all cases the flights covered the entire route of this assessment. The reviewed aerial photographs are referenced in Section 14.0 and the photographs are provided in Appendix C.

The review of the aerial photography is summarized in Table 4 below, which describes the photographs reviewed and the important features that were observed on the photographs. The photographs provide a historic record of the site and adjacent properties and the period over which the developments have taken place.

As a part of this review, only general features surrounding the site were observed at the scale of the photographs that were available. During the review of the aerial photographs no features were specifically observed that represent an REC at the Site. Industrial and commercial operations were observed surrounding the Site, but no specific condition was observed in the photographs that would represent an REC.

Table 3-Aerial Photo Review Summary Table

Item	Photograph Reference/Scale	Observations (sequence of photographs and our review observations are from south to north along the freeway corridor)	
		Northbound	Southbound
1.	1938 1" = 1,000'	**Set of 8 photographs:** East and south of the Santa Ana river the land is large undeveloped but used for agriculture and row crops. Fairview Avenue is the main street that runs north/south and Gisler Street is present. The sanitation district facilities are not operational and immediately west of the river the area is largely undeveloped. Further north there are agricultural operations and residences/orchards in the area of Ward/Talbert and Wright/Talbert. Between Magnolia and Beach there is little development and only some areas that appear to be used for agriculture or citrus orchards. The SP railroad is operational west of Beach Boulevard as is the Central Memorial Park Cemetery on Bolsa/Beach. Additional residential development is apparent near Westminster/ Spring-dale but to Garden Grove Boulevard the land is mostly vacant or used for agriculture. There is no indication of the Naval Seal Beach facility south of Garden Grove Boulevard and the land is sparsely used for agriculture to the San Gabriel river. There does not appear to be any residential or commercial facility about the Rancho Road area north of Westminster Boulevard.	
2.	1947 1" = 1,000'	**Set of 8 photographs:** East and south of the Santa Ana river the land continues to be largely undeveloped with some agricultural use. The sanitation facilities south of the freeway are in operation and aboveground tanks and settling ponds are noted. The use west of the river is largely unchanged except for additional residential development in the area of Warner and on Beach south of the freeway and in the area of Goldenwest and Westminster. Further west the facilities of the Naval Station at Seal Beach are operational with bunkers south of Garden Grove Boulevard visible. Other than the Naval facilities the land west and north of Westminster and Ranch Road is largely vacant and unused to the County line.	
3.	1953 1" = 1,000'	**Set of 9 photographs:** East and south of the Santa Ana river the land use is largely with some added agricultural use around Fairview. West of the river up Beach Boulevard the land use appears similar to 1947 with mostly agricultural use. Between Goldenwest and Rancho Road there is increased residential development and use. The development is mostly along the main roads with the middle part of the parcel being vacant or used for agriculture. Beyond Rancho Road also the use is similar to 1947. Except for the Naval facilities there is little or no use other than agriculture.	
4.	1968 1" = 1,000'	**Set of 8 photographs:** The I-405 freeway is in-place and appears to be operational. The connector to SR-73 is built but roadway does not extend beyond the connector facilities. All of the over- and under-passes are constructed as are the connectors to SR-22 and I-605.	

Table 3-Aerial Photo Review Summary Table

Item	Photograph Reference/Scale	Observations (sequence of photographs and our review observations are from south to north along the freeway corridor)	
		Northbound	Southbound
4	1968 (contd.) 1" = 1,000'	Frontage to the river is vacant or used for agriculture. Some commercial/light industrial activities are operating at the Ellis/Euclid exit and the remaining frontage properties appear vacant to Slater. There is a residential development between Slater and midway between Magnolia and Newland. Parcels near the roadway ramps/cloverleaves are vacant. Properties to Beach Boulevard are vacant but there is commercial development on Beach and residential surrounding McFadden. Industrial activities are operational on Goldenwest Circle off Bolsa Avenue except for the transmission line corridor that is vacant. The land between Bolsa and Goldenwest is also vacant. Further north the use is mostly residential except for commercial use surrounding Westminster Street. A school is present east of the Springdale intersection and a water tank east of the Navajo/Sioux intersection. The parcels surrounding the Valley view/Garden Grove exits and Seal Beach are vacant and unused. The country club operations northeast of the Seal Beach intersection are in place.	South and east of the river the parcels adjacent to the freeway are undeveloped with mostly residential use further south. Also, commercial facilities are apparent south of the Baker/Fairview intersection. Other than the Orange County Sanitation District facilities at the Santa Ana river there is little adjacent land use to Brookhurst. Beyond Brookhurst the land use is mostly residential except for a parcel used for a school facility and a storage operation southwest of the Magnolia intersection. Between Magnolia and Beach the land is vacant and beyond is the Huntington Beach Shopping Center. Residential use predominates between McFadden and Goldenwest. The parcel between Goldenwest and Edwards appears used for agriculture. North of the railroad line appears to be a building materials supply operation as stockpiles of soil can be observed. Other than the commercial operations surrounding Westminster and Springdale the remaining properties are residential in use to Bolsa Chica. South of the freeway and west of Bolsa Chica the land is used primarily for agricultural within the Naval Seal Beach facility. Further, west are the residential uses of Leisure World and additional single-family homes near the river and east of the transmission line corridor.
5.	1977 1' = 1,000'	**Set of 7 photographs:** The freeway was in-place and operational by 1968 and the changes along the corridor are limited thereafter. The discussion in this section is limited to the changes observed between 1968 and 1977. Observations are reported by exception and the developments that were already noted by 1968 are not repeated unless a change is noted.	

Table 3-Aerial Photo Review Summary Table

Item	Photograph Reference/Scale	Observations (sequence of photographs and our review observations are from south to north along the freeway corridor)	
		Northbound	Southbound
5.	1977 (contd.) 1' = 1,000'	Single family homes are built west of Smalley Road near the intersection of SR-73 & I-405. Commercial/industrial facilities are operational on parcels between Harbor and the Euclid/Ellis exit. Commercial operations are present at the main street intersections near the freeway: Brookhurst/Slater, Bushard/Warner, Magnolia/Heil, Beach/McFadden, Westminster, and Garden Grove/Bolsa Chica. Increased industrial activities are apparent at the Bolsa/Goldenwest intersection	The adjacent parcels east and south of the river are mostly occupied by commercial facilities on Harbor, a SCE facility, a park and a school. Other uses are primarily residential. The properties at the Euclid exit are all commercial. A playground with baseball diamonds are built in the parcel to the east of Ward. The main intersections near the freeway are commercial operations. A playground (mini golf and go cart track) is observed on the parcel between Warner and Magnolia. The area north of the Huntington Beach Mall appears to be developing as residential property. The Westminster Mall is operational on Bolsa. The materials supply operation appears limited compared to 1968.
6	1989-90 1" = 1,000'	**Set of 7 photographs:** Observations are reported by exception and the developments that were already noted by 1977 are not repeated unless a change is noted.	
6	1989-90 1" = 1,000'	South and east of the river most of the parcels are developed – residential east of Fairview and commercial/industrial west of Harbor. The area between Harbor and Fairview appears in continued use as agricultural land. The Parcel on the southwest corner of Ward/Talbert is vacant. The southwest quadrants of Brookhurst/Slater & Warner/Bushard are developed to commercial use as in the ramp medians at the Magnolia exit. The commercial/industrial operations on Bolsa near the freeway have filled the remaining vacant parcels and all of the vacant land is now used to near current conditions. Office buildings have been built near the Seal Beal exit.	The go-cart operation at Magnolia/Warner is no longer present and the area appears to be converted to office building use. The area north of the Huntington Beach Mall is used for commercial and residential use. The material supply operations north of the Westminster Mall appear as in 1977. The remaining features appear same as 1977.
7	1994-95 1" = 1,000'	**Set of 7 photographs:** Observations are reported by exception and the developments that were already noted by 1989-90 are not repeated unless a change is noted.	
7	1994-95 1" = 1,000'	Grading operations have started for the mall and parking garage at the I-405/SR-73 intersection. Some office buildings are already built. The parcel on the southeast quadrant of Ward/Talbert is used as a RV park.	The material supply operation north of the Westminster Mall appears stopped and the area appears graded for building pads.

Table 3-Aerial Photo Review Summary Table

Item	Photograph Reference/Scale	Observations (sequence of photographs and our review observations are from south to north along the freeway corridor)	
		Northbound	Southbound
8	2002 1" = 1,000'	**Set of 7 photographs:** Observations are reported by exception and the developments that were already noted by 1994-95 are not repeated unless a change is noted.	
8	2002 1" = 1,000'	The shopping center on South Coast Drive is built and operational and the parcel east of Harbor is being graded for the Ikea store to be built on the parcel. The water tank east of Edwards is not present and the parcel appears vacant.	The parcel north of the Westminster Mall appears converted to commercial use – office buildings.

7.3 TOPOGRAPHIC MAP REVIEW

Topographic maps were reviewed for the following years: 1898, 1901-2, 1934-35, 1947, 1950-51, 1964-65, 1972, and 1981. Copies of these maps are provided in Appendix C, and the maps reviewed are referenced in Section 14.0.

The review of the topographic maps is summarized in Table 5 below where map observations are summarized and the important features that were observed on the maps are noted. The topographic maps provide a historic record of the site and adjacent properties and the period over which the developments have taken place.

During review of the topographic maps, no features were identified that would represent a REC at the site.

Table 4- Topographic Map Summary Review Table

Item	Topographic Map Reference/Scale	Observations
1.	1898, Anaheim, 15', 62,500 1901, Santa Ana, 15', 62,500 1901, Southern California 1, 60', , 250,000 1902, Corona, 30', 125,000 1902, Downey (set of two), 15', , 62,500	In the area of the freeway there is little or no development. The communities of Los Alamitos, Westminster, and Santa Ana are shown with surrounding areas connected by a network of roads and railroads. The railroad to the beach through Westminster is already built and operational with a side track going to Los Alamitos. The main east-west road appears to be the Garden Grove Boulevard that is already designated as route 22. Coyote Creek and Anaheim Creeks drain the area in the southwesterly direction and the main drainage on the easterly side is the Santa Ana river. Marshy/wetland areas are designated near Wintersburg (Warner). The residences are limited to areas near roadways except in the areas of the main communities described above.
2.	1934, Las Bolsas, 15', 62,500 1935, Garden Grove, 7.5', 31,680 1935, Newport Beach (set of three), , 7.5', 31,680 1935, Seal Beach, 7.5', 31,680	There is little or no development near or east of the Santa Ana River. In the area only Talbert appears to have a bridge across the river. Ellis and Verano (Euclid) Streets are present near the freeway route. Other street names with current references are as follows: Wintersburg - Warner, Smeltzer - Edinger, Cannery (Magnolia) and Wright (Brookhurst). The area northeast of Warner/Newland and northwest of the railroad and McFadden are shown as wetland. Development is more concentrated in the communities of Wintersburg (near Warner and Beach), Midway City (Bolsa and Beach) and Westminster (Westminster and Beach). Otherwise the residences are along the main roads and only slightly increased in the previous 35 years.
3.	1947, Downey, 15', 50,000 1950, Anaheim, 7.5', 24,000 1950, Los Alamitos (set of three), 7.5', 24,000 1950, Seal Beach, 7.5', 24,000 1951, Long Beach Vicinity, 7.5', 24,000 1951, Newport Beach (set of four), 7.5', 24,000	The roads are developed and Orange Coast College is in operation. Talbert continues to be the only bridge across the river in the area with a crossing on Adams further to the south. Communities appear to develop at major crossings such as Talbert and Bushard. The sewage disposal facility is shown in the area of the OCSD facilities on Ellis Street. Colonia Juarez is located at Ward and Warner and Miles Square Park is shown as a Naval Reservation. Near the freeway area are communities of Boulevard Gardens (Edinger and Beach) and Midway City (Bolsa and Beach) that has grown in the last 15 years. Additional communities are shown at Goldenwest and Westminster (Westminster and Beach) and Barber City (Westminster east of Springdale). The Naval Reservation at Seal Beach is operational south of Garden Grove Boulevard. Generally, the development along the route is sparse and limited mostly to residences on main streets. Several unnamed drainage features are shown – west of Springdale and Westminster) and several on north-south or northeast-southwest alignment in the area north of the Naval Reservation at Seal Beach.
4.	1964, Los Alamitos (set of three), 7.5', 24,000 1965, Anaheim, 7.5', 24,000 1965, Newport Beach (set of six), 7.5', 24,000 1965, Seal Beach, 7.5', 24,000	The alignment for the I-405 is shown with the freeway terminus at Harbor Boulevard on its south. It is shown as being under construction in stretches and it is not clear whether the entire distance is under construction or portions of the freeway south of the Los Angeles County line. Residential development is shown in Fountain Valley, Westminster, Midway City, Barber City and Rossmoor. The Huntington Beach Mall is beginning to be constructed at the Beach exit, Other features observed on the maps include California and TeWinkle schools at Harbor, OCSD facilities at Euclid/Ellis, Pleasant View School near Magnolia, Ocean Channel crossing between Warner and Magnolia, transmission lines north of Magnolia, Westminster High School at Edwards, the Grant Boundary and Boos School at Rancho Road, and the transmission lines just east of the San Gabriel river. A well is shown south of the freeway near the northern part of the current Westminster Mall.

Table 4- Topographic Map Summary Review Table

Item	Topographic Map Reference/Scale	Observations
5	1972, Anaheim, 7.5', 24,000 1972, Los Alamitos (set of two), 7.5', 24,000 1972, Newport Beach (set of six), 7.5', 24,000 1972, Seal Beach, 7.5', 24,000	The southern part of the I-405 is extended and the SR-73 connector is constructed. The remaining alignment for the I-405 is as shown in the 1964-65 topographic maps. The 1972 maps are identified as photorevised maps based on the 1964-65 maps. Changes since 1964 include the following: residential development near the SR-73 connector, commercial development at Harbor, Ellis/Euclid, Brookhurst (including the Fountain Valley High School), Magnolia, Beach (Huntington Beach Mall is built out and a trailer park is built), commercial/industrial facilities between Beach and Goldenwest, golf course at Seal Beach Boulevard.
6.	1981, Anaheim, 7.5', 24,000 1981, Los Alamitos (set of three), 7.5', 24,000 1981, Newport Beach (set of five), 7.5', 24,000 1981, Seal Beach , 7.5', 24,000	The freeway is built and operational to its current configuration. SR-73 is also shown to be built to its current configuration. The 1981 maps are referenced as photorevised maps based on the 1964-65 maps. Changes from 1972 maps include the following: the commercial area in the major street intersections have enlarged and have reached near current configuration, the residential areas are mostly built, the Westminster Mall is built, and increased commercial facilities at the Westminster northbound off-ramp.

7.4 SANBORN MAP REVIEW

Sanborn insurance maps requested for the assessment of the Site were not located. EDR reported that there is no coverage, and no Sanborn maps were available for review.

7.5 OTHER HISTORIC MAP REVIEWS

We referred to the Munger Map Book (1999), and Department of Oil and Gas (DOG) website maps for oil wells that may be in the area of the site. Specifically, we looked at Segment 1 maps W1-5 and W1-6 from the DOG website that covers the area of the I-405 corridor. The following oil wells are shown at the site or in its near vicinity:

Table 5-Site Adjacent Oil Wells

No	API Number	Operator	Lease	Latitude83	Longitude83	Drilling Depth (feet)	Status
1	05901006	Exxon Mobil Corp	Ellis	33.693091	-117.939573	7586	Plugged Well
2	05901073	Morton and Sons	Crew Community	33.698945	-117.946118	9759	Plugged Well
3	05901144	CalResources LLC	Von Schriltz	33.70611	-117.959704	5128	Plugged Well
4	05920233	CalResources LLC	Hoeptner	33.71506	-117.96243	10325	Plugged Well
5	5901229	The Superior Oil Co.	Strader	33.722019	-117.974083	9077	Plugged Well
6	05901000	Hillman-Long, Inc.	-	33.73074	-117.989843	8705	Plugged Well
7	05901039	W. G. Krieger	Miles	33.731057	-117.990801	2981	Plugged Well
8	05901136	Shell Western E & P Inc. (SWEPI)	Lewis	33.73851	-118.000638	10010	Plugged Well
9	5901287	Westminster Oil Co.	-	33.744218	-118.000259	4438	Active Producer

The I-405 corridor lies north of the coastal oil fields of Newport Beach, Huntington Beach and Sunset Beach. The above wells are plotted particularly close to the freeway– see Figure 9. The following hazards are indicated because of the presence of an oil well in the area of the site:

- Improper abandonment may provide conduit to depth and possible source of oil and/or gas leakage; and

- Sumps and pits used during the drilling operations may still exist, and these are sources of hydrocarbon and heavy metal contamination in soil.

Well designated as No. 5- The Superior Oil Co., Strader was located at the site at I-405 northbound just past the Magnolia Street I-405 on-ramp. The rest of the wells are located at least 200 ft from the proposed site improvements area, and therefore do not represent a REC to the site.

We contacted the DOG custodian of records to obtain available documents pertaining to these nine wells. We were provided with Notices to Drill New Well and Notices to Abandon Well forms for several wells. All wells are reported to be properly abandoned. The No. 5- The Superior Oil Co., Strader well was drilled to 9,077 ft and no oil or gas was encountered. The well was properly abandoned immediately following the completion of drilling.

None of the reviewed oil wells represents a REC to the Site.

7.6 HISTORIC USE OF THE SITE

The I-405 corridor had been vacant land or used for agricultural purposes prior to the development for roads and highways in the early part of the twentieth century. Urban development in the area started in the 1950's and picked up pace in the 1970's; the area at and around the I-405 freeway was almost fully developed by mid-1980's. At an initial stage of the construction, the I-405 freeway terminated at Harbor Boulevard. The southern portion of the I-405 freeway was completed by 1968. As part of this construction, the SR-73 connector was built, but the Corona Del Mar Freeway (the first three miles of SR-73) was not completed and operational until 1978. The rest of SR-73 was built at a later date and finally opened in 1996.

- Due to the I-405 freeway usage since the 1960's it should be assumed that near surface soil in the unpaved areas of freeway is impacted by Aerially Deposited Lead (ADL), which is considered to be an REC. Additional investigations for determination of concentrations of ADL in the soil will be necessary to further define the conditions in this area and to plan for management of soil to be excavated during any future construction.
- The site bridges were initially constructed between the 1960's and 1978. Up to 18 bridges are planned to be replaced and up to 4 to be widened as part of the project (see Section 3.5). There is a potential that the bridges contain asbestos containing materials (ACM) and/or lead based paint (LBP) that used to be custom building materials at the time the bridges were constructed. ACM was usually used for coating in some concrete bridges, mastic and sealants. LBP was usually used for coating of steel to protect against corrosion, and is also possibly used for the bridge lane striping. Although currently, if present,

asbestos does not represent an REC, if disturbed, the asbestos dust particles are carcinogen substance that would represent a REC to the site. The ACM and LBP investigation for any of the site bridges proposed to be fully or partially demolished would be needed in order to properly manage and dispose of bridges' demolition debris.

7.7 HISTORICAL USE INFORMATION ON THE ADJOINING PROPERTIES

Historical use of the property adjacent to the freeway parallels the growth of Orange County during the post-war period when many new cities were formed and the population increased from about 130,000 in 1940 to 700,000 by 1960. The development first centered on the existing communities of Huntington Beach, Garden Grove, Santa Ana and Westminster. Cities like Costa Mesa, Garden Grove, and Fountain Valley were incorporated in 1950.

The development around the freeway was mostly residential with supporting commercial facilities located on main roads and major roadway intersections. Commercial facilities were also developed at and near freeway ramps. Light industrial facilities were concentrated in certain areas near the site such as near I-405 at Bolsa Avenue and near I-405 at S. Euclid Street/Ellis Avenue. Few schools were also developed, such as Fountain Valley High School near I-405/Slater Avenue, California Elementary School near I-405/Harbor Blvd. and Westminster High School near I-405/Edwards Street.

No RECs were found as a result of the historical use of the adjoining properties.

8.0 SITE RECONNAISSANCE

8.1 METHODOLOGY AND LIMITING CONDITIONS

The site reconnaissance was performed on December 22 and 23, 2009 by Vesna Glisic Petrilla, a GDC professional experienced in environmental site assessments. The objective of the site reconnaissance was to observe site conditions for obvious visual indications of activities in the general corridor area that might represent a concern for the project. The site reconnaissance was conducted by walking along the I-405 northbound and southbound shoulders within Caltrans right-of-way area, as well as the intersections proposed for improvements. Adjacent properties were observed externally from I-405. A summary of the observations made during the site reconnaissance and other pertinent site information is filed and available for review upon request. Photographs taken during the Site reconnaissance are presented in Appendix A. The weather conditions during the Site reconnaissance were windy and sunny with temperature in the high 60's.

8.2 GENERAL SITE SETTING

The site runs through residential, commercial, and light industrial areas. General features along the site are presented in Table 7 below. The I-405 corridor runs through a populated urban setting where the primary use surrounding the freeway is residential with commercial use located along main roads and major intersections. There are limited pockets of industrial activity that for the most part would be classified as light industrial or "garden" industrial.

Table 6-Site Observation Summary Table

CALTRANS DISTRICT #/FREEWAY	SECTION	NORTHBOUND	SOUTHBOUND
		Descriptions in both columns are provided from south to north	
District 12 (405 Freeway)	Bristol St Overcrossing to N73/N405 Connector Overcrossing	South coast Plaza Mall, Banks, Restaurants, Parking Structures, and Metro Point at South Coast	Holiday Inn, Residential Homes and Trinity Christian Center International.
	N73/N405 Connector Overcrossing to Fairview Road Overcrossing	Theater complex, parking structure and residential homes.	Residential homes.
	Fairview Road Overcrossing to Greenville Banning Channel	Farm land, Ikea furniture store, Harbor Boulevard Undercrossing, office building, Hooters Restaurant and La Quinta Inn.	Residences, SCE facility, Wickes furniture store, Harbor Boulevard Undercrossing, restaurant, gas station, and residences.
	Greenville Banning Channel to East Valley Channel	Office, commercial and light industrial facilities, Santa Ana River, Ellis Road Undercrossing, and more commercial/light industrial facilities.	Residences, small park, Santa Ana River, Ellis Road Undercrossing, water tank, and commercial facilities.
	East Valley Channel to Brookhurst Street Overcrossing	Commercial facilities and residences.	Commercial facilities and multi-unit dwellings.
	Brookhurst Street Overcrossing to Warner Avenue Overcrossing	Commercial facilities and residences.	Mostly residences with small frontage for Fountain Valley High School.
	Warner Avenue Overcrossing to Newland Street Overcrossing	Mostly residences with commercial shops near Magnolia Street.	Commercial and residences.
	Newland Street Overcrossing to McFadden Ave Overcrossing	Residences with commercial on Beach Boulevard.	Residences and commercial including the shops for Bella Terra.
	McFadden Ave Overcrossing to Golden Street West Overcrossing	Residences and commercial.	Commercial and residences including commercial facilities on Goldenwest.
	Golden Street West Overcrossing to Edwards Street Overcrossing	Residences, farm fields, and high school.	Westminster Mall and other commercial facilities.
	Edwards Street Overcrossing to Anaheim-Barber City Channel	Office buildings and commercial facilities on Westminster Avenue.	Commercial facilities and residences.
	Anaheim-Barber City Channel to Bolsa Chica Ditch	Residences except for commercial facilities on Garden Grove Boulevard.	Residential homes.
	Bolsa Chica Ditch to Seal Beach Boulevard	Residences and country club. Some commercial facilities on Seal Beach Boulevard.	USN Weapons Stations at Seal Beach.
	Seal Beach Boulevard to E22/N405 Connector OC	Commercial facilities on Seal Beach Boulevard and residences thereafter.	Leisure World – residential.

8.3 EXTERIOR OBSERVATIONS

The entire I-405 corridor was traversed by vehicle. At selected locations, a walking survey was performed along the berms and on the freeway on-ramps and off-ramps to make Site observations and to take photographs of conditions. With the exception of the following items, there were no features observed that represented an REC:

- Dead trees and shrubbery were observed in the area between the Anaheim-Barber City Channel and the Bolsa Chica Ditch on the northbound and the southbound side of the freeway. Some dead vegetation was also observed in the area of the Los Alamitos Channel on the northbound side of the freeway. The reason for the distressed vegetation could not be ascertained by site observations.
- A pile of approximately 10 cubic yards of unidentified soil was observed on the southeast side of the Newland Street UC. The pile appears to consist of leftover construction material and is mainly silty sand with a few pieces of construction debris. No apparent signs of contamination were visually observed; however, due to the unknown source of the pile, it represents an REC. The pile should be tested for TPH gasoline/diesel (EPA Test Method 8015M) and CAM Title 22 Metals (SW-846) in order to profile the material for disposal purposes prior to removal. The location of the pile is presented in Figure 7-8.
- Two 30-gallon open trash bins and two 5-gallon buckets with lids, which appeared to be dumped, were observed in the I-405 NB shoulder just south of the I-605 interchange. One trash bin was filled with miscellaneous trash and the other trash bin contained one 5-gallon bucket with a lid; another 5-gallon bucket was on the ground. All materials were contained in the bins/buckets and no spill was observed on the ground. Based on the labels on the buckets, both 5-gallon buckets contained paint, and based on weight, appeared to be full. No attempt was made to open the buckets to check for the content. The buckets should be removed from the site prior to construction and properly disposed of off site. The location of the buckets is presented in Figure 7-18.
- Standard white striping was observed on the freeway shoulder and yellow striping on the HOV lanes during the site visit. Based on the history of previous use of LBP for striping of freeways, it should be assumed that the freeway striping may contain an LBP, which is an REC. Freeway widening may require removal of the existing shoulder striping. The striping should be tested for lead in order to evaluate proper methods of disposal and workers' protection during removal.

8.4 INTERIOR OBSERVATIONS

The site is a public thoroughfare, with no interior locations. This section is not applicable.

9.0 INTERVIEWS

9.1 INTERVIEW WITH OWNER

A questionnaire regarding site conditions was forwarded to Mitch Khalilifar of Caltrans during the initial ISA prepared in 2007. It is Mr. Khalilifar's position that this information is only pertinent to be solicited from owners of parcels that may be acquired and is not necessary to be completed for the owner of a public thoroughfare.

Since the list of the properties to be acquired was not finalized at the time of the ISA update preparation, for purposes of this ISA it is assumed that Caltrans has no specific information or special knowledge regarding environmental conditions along the Site potential ROW acquisition properties.

9.2 INTERVIEWS WITH LOCAL GOVERNMENT OFFICIALS

Government agencies were contacted and their responses are described above in Section 5.2 of this report. No separate interviews were conducted with agency staff relating to the site.

10.0 FINDINGS AND OPINIONS

The following findings and opinions resulted from GDC's ISA of the Site:

Potential ROW Acquisition REC Properties:

Total of 12 potential ROW acquisition properties are considered to be RECs, 8 partial acquisition and 4 full acquisition properties as shown below:

- There are a total of 189 potential ROW acquisition properties, including 185 partial acquisitions and 4 full acquisitions. Eight potential ROW acquisition properties are considered to be RECs and are presented below:

1. Arco #6116 (BP West Coast Products, LLC) 17520 Brookhurst Street, Fountain Valley (site ID no.54)
2. Thrifty Oil Co.#085, 17475 Brookhurst Street, Fountain Valley (site ID no.56)
3. Mobil#18 G3W, 15001 Goldenwest Street, Huntington Beach (site ID no.127)
4. Shell Oil, 15501 Beach Boulevard, Westminster (site ID no.103)
5. Old Mobil Station, 14022 Springdale Street, Westminster (site ID no.156)
6. Chevron#9-5401, 5992 Westminster Blvd, Westminster (site ID no.158)
7. Shell Oil, 5981 Westminster Blvd, Westminster (site ID no.160)
8. Thrifty Oil, 6311 Westminster Blvd, Westminster (site ID no.161)

Site specific investigation of these 8 partial take properties should be performed during PA&ED phase of the project. A preliminary list of the ROW acquisition properties is presented in Table 2a in Section 4.1. Location of the potential ROW acquisition properties is presented in Figures 8-1 to 8-22.

- Four potential ROW acquisition properties are proposed for full ROW acquisition; these are labeled as 73, 77, 78, and 82 in Table 2a (Sports Authority retail store, Fountain Valley Skating Center, Days Inn motel, and Boomers, respectively) and are occupied with buildings. Site specific investigation of these properties, including ACM and LBP investigation, should be performed during PA&ED Phase of the project.

Non Acquisition Properties:

- Nineteen LUST sites, 2 dry cleaning facilities, 1 SLIC site and 2 DOD sites where the current site remediation of soil and groundwater contamination is in progress have a potential to impact groundwater conditions at the freeway ROW, which is an REC. Historically highest groundwater level along the alignment varies between 5 and 30 feet bgs. If construction is planned that will encounter the groundwater, or if construction dewatering is required, groundwater should be tested for the following to evaluate proper methods to manage and dispose of the groundwater that might be removed during construction:

  a) Total Petroleum Hydrocarbons (TPH) for both gasoline and diesel, and Volatile Organic Compounds(VOC) at all locations;

  b) Tetrachloroethylene or perchloroethylene (PCE) and trichloroethylene (TCE) at I-405/ Route 39 connector and;

  c) Total 22 Metals, TCE, PCE, and pH between I-405/I-605 Connector and I-405/SR-22 Connector.

Location of the sites above is presented in Figures 7-1 to 7-22 and 8-1 to 8-22.

Nine out of 19 LUST sites and 1 SLIC site are located adjacent to the proposed site street improvements. There are no records that the soil contamination from any of these releases had plumed into the city streets.

Other Site Concerns:

- 220 gallons of diesel fuel were spilled during a traffic accident that occurred in 1987 at NB I-405, south of I-605, and the incident listed in ERNS database. There are no records of Site cleanup, and no available additional records. The exact location of the spill was not available. It should be assumed that the soil in the area of release is impacted by TPH which is an REC. Due to the unknown location of the spill, the upper 2 feet of soil excavated along I-405 NB shoulder from the I-605/I-405 connector to approximately 1000 ft south of I-605/I-405 connector should be set aside and tested for TPH (gasoline and diesel) before disposed of or reused at the Site. Approximate location of the spill is presented in Figure 7-18.
- The Site bridges were initially constructed between the 1960's and 1978. Up to 18

bridges are planned to be replaced and up to 4 widened. There is a potential that the bridges contain asbestos containing materials (ACM) and/or lead based paint (LBP), custom building materials at that time, which are both RECs. Any construction involving complete or partial bridge demolition would require ACM and LBP investigations in order to properly manage and dispose of bridge demolition debris. Proposed bridge improvements list is presented in the table in Section 3.5.

- There are unpaved areas on both sides of the freeway that are locations where ADL may be present in the near surface soil. It should be assumed that near surface soil in the unpaved ROW is impacted by ADL, which is an REC. Additional investigations will be necessary to further define the conditions in these areas and to plan for management of soil to be excavated during any future construction.
- A standard white striping was observed on the freeway shoulder and yellow striping on the HOV lanes during the site visit. Based on the history of previous use of LBP for striping of freeways, it should be assumed that the freeway striping may contain an LBP, which is an REC. Freeway widening may require removal of the existing shoulder striping.
- A pile of approximately 10 cubic yard of unidentified soil was observed on the southeast side of the Newland Street UC, which is an REC. The pile should be tested for TPH gasoline/diesel (EPA Test Method 8015M) and CAM Title 22 Metals (SW-846) in order to profile the material for disposal purposes prior to removal. Location of the pile is shown in Figure 7-8.
- Two 30-gallon open trash bins and two 5-gallon buckets with lids which appeared to be dumped were observed on the I-405 NB shoulder, just south of I-605 interchange, which is an REC. Based on the labels on the buckets, both 5-gallon buckets contained paint, and appeared to be full. No spill was observed on the ground. The buckets should be removed from the Site prior to construction and properly disposed of offsite. Location of the buckets is shown in Figure 7-18.

11.0 RECOMMENDATIONS

Based on the findings of this ISA, GDC recommends the following further environmental investigation:

Investigation to be performed during **PA& ED** stage of the project:

- Site specific investigation for the 8 partial take ROW acquisition properties considered to be RECs.
- Site specific investigation for the 4 full take ROW acquisition properties, including ACM and LBP investigation
- Groundwater removed during construction, that might be impacted with releases of the nearby 19 LUST sites, 2 dry cleaning facilities, 1 SLIC site and 2 DOD sites, should be tested for the following analytes to evaluate proper methods of its management and disposal:

  a) Total Petroleum Hydrocarbons (TPH) for both gasoline and diesel, and Volatile Organic Compounds (VOC) at all locations;

  b) Perchloroethylene (PCE), Trichloroethylene (TCE) at the I-405/ Route 39 connector and;

  c) California (CA) Title 22 Metals, TCE, PCE, and pH between of I-405/I-605 Connector and I-405/SR-22 Connector.

- ACM and LBP investigation for any of the site bridges proposed to be fully or partially demolished in order to properly manage and dispose of bridges' demolition debris;
- Site investigations for ADL within construction widening zone along the unpaved freeway shoulder area;
- LBP testing of freeway striping in order to evaluate proper methods of disposal and workers' protection during removal;
- Testing of Newland Street UC soil pile for TPH gasoline/diesel and CA Title 22 Metals in order to profile the material for disposal purposes prior to removal; and
- Removal and disposal of two 30-gallon open trash bins and two 5 gallon buckets, dumped in the I-405 NB shoulder just south of I-605 interchange, prior to construction.

The following testing should be done during **construction phase** of the project:

- The upper 2 feet of soil excavated along I-405 NB shoulder from I-605/I-405 connector to approximately 1000 ft south of I-605/I-405 connector should be set aside and tested for TPH (gasoline and diesel) before disposed of or reused at the Site;

12.0 SIGNIFICANT DATA GAPS

Significant data gaps were not identified during the preparation of this ISA except as follows:

- There was no easy access to ROW areas behind sound walls and so the conditions in these areas were not observed.

13.0 DEVIATIONS

No material deviations from the standard were made in the preparation of this report.

14.0 ADDITIONAL SERVICES

14.1 RADON

Radon is an invisible, odorless, radioactive gas produced by the decay of uranium in rock and soil. Radon gas enters a building through cracks in the foundation, areas surrounding drainage pipes, and other openings in the foundation and walls. Buildings with basements and concrete slab foundations are more susceptible to elevated radon gas levels. The radon decay products, once inside a building, may become attached to dust particles and inhaled, or the decayed radioactive particles alone may be inhaled and cause damage to lung tissue.

The Department Of Conservation, California Geological Survey (2005) Database for radon indicates that a low potential exists for radon levels at the Site to exceed the EPA action level of 4.0 pCi/L.

14.2 LEAD-BASED PAINT

Freeway striping may contain LBP and should be tested for lead to assure proper disposal and workers protection during freeway widening. If any site bridges are to be fully or partially demolished, an LBP study should be performed on the bridge materials.

Four potential ROW takes, labeled as 73, 77, 78, and 82 in Table 2a (Sports Authority retail store, Fountain Valley Skating Center, Days Inn motel, and Boomers, respectively) are potential full ROW acquisition occupied with buildings. Prior to demolition of any building structure, an LBP study should be performed.

14.3 LEAD IN DRINKING WATER

There is no supply of drinking water at the site and this section is not applicable.

14.4 WETLANDS MAP

According to the EDR, there is no U.S. Fish and Wildlife Service (FWS) map coverage for wetlands for the Site.

14.5 ASBESTOS-CONTAINING MATERIALS

There are no structures on the site with the exception of freeway facilities.

If any Site bridges are to be fully or partially demolished, an ACM study of the bridge materials should be performed.

Four potential ROW takes, labeled as 73, 77, 78 and 82 in Table 2a (Sports Authority retail store, Fountain Valley Skating Center, Days Inn motel, and Boomers, respectively) are potential full ROW acquisition occupied with buildings. Prior to demolition of any building structure, an ACM study should be performed.

15.0 REFERENCES

Caltrans District 12, Structure Maintenance and Investigations Log of Bridges and State Highways, April 2005.

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Department of Conservation, Division of Mines and Geology, 1998 - Seismic Hazard Zone Report for the Seal Beach 7.5-Minute Quadrangle, Los Angeles and Orange Counties, California, Seismic Hazard Zone Report 020

Department of Conservation, Division of Mines and Geology, 1997 - Seismic Hazard Zone Report for the Anaheim and Newport Beach 7.5-Minute Quadrangles, Orange County, California, Seismic Hazard Zone Report 03

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Department of Water Resources, (DWR) 2007 - Groundwater Basins in California, Chapter IV, Groundwater Basin Reports, Orange County Basins, Draft, March 2007.

Department of the Toxic Substances Control (DTCS) web site- http://www.envirostor.dtsc.ca.gov/public/

State Water Resources Control Board (SWRCB) web site - http://www.geotracker.swrcb.ca.gov/

Geocon Consultants, Inc., 2001 - Aerially Deposited Lead Investigation, Route 405 Orange County, California Contract 43A0078, Task Order No. 12-084100-HB prepared for Caltrans, December 11, 2001 (covers from Ellis Street to Ward Avenue in Huntington Beach).

Geocon Consultants, Inc., 2004 – ADL Investigation Report, Southbound Route 405

Onramp at Seal Beach Boulevard, Orange County, California prepared for Caltrans, April 6, 2004

Geocon Consultants, Inc., 2004 – ADL Investigation Report, Southbound Route 405 Onramp at Euclid Street, Orange County, California, prepared for Caltrans, May 21, 2004

Group Delta Consultants, Inc, 2007 – Report of Initial Site Assessment, I-405 Freeway from SR-73 to I-605, Orange County, California

Group Delta Consultants, Inc, 2008 – Report of Initial Site Assessment, West County Connector Project, SR-22 Freeway improvements, I-405/I-605 HOV Connector Segment, Orange County, California

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Jennings, C.W. and Strand, R.G., 1969 - Geologic Map of California; California Division of Mines and Geology, Los Angeles Sheet; Scale 1:250,000.

Jennings, C. W., 1994 - Fault Activity Map of California and Adjacent Areas with Locations and Ages of Recent Volcanic Eruptions, Division of Mines and Geology.

Parsons, 2005 - Preliminary Environmental Analysis Report, Interstate 405 Major Investment Study, Orange County prepared for Orange County Transportation Authority, November 2005.

Parsons, May 14, 2010 – Draft Environmental Impact Report/Environmental Impact Statement, Chapter 2-Project Alternatives

Aerial Photographs Reviewed:

Item	Year	Segment	Scale	Source
1	1938	1	1"=1000'	Laval
		2		
		3		
		4		
		5		
		6		
		7		
		8		
2	1947	1	1"=1000'	Fairchild
		2		
		3		
		4		
		5		
		6		
		7		
		8		
3	1953	1	1"=1000'	Pacific Air
		2		
		3		
		4		
		5		
		6		
		7		
		8		
		9		

Item	Year	Segment	Scale	Source
4	1968	1	1"=1000'	Teledyne
		2		
		3		
		4		
		5		
		6		
		7		
		8		
5	1977	1	1"=1000'	Teledyne
		2		
		3		
		4		
		5		
		6		
		7		
6	1989	1	1"=1000'	USGS
	1990	2		
		3		
		4		
		5		
		6		
		7		
7	1994	1	1"=1000'	USGS
		2		
		3		
		4		

Item	Year	Segment	Scale	Source
		5		
		6		
	1995	7		
8	2002	1	1"=1000'	USGS
		2		
		3		
		4		
		5		
		6		
		7		

Topographic maps reviewed:

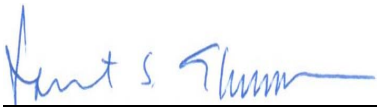
Item	Year	Topography Quadrangle	Series	Scale
1.	1898	Anaheim	15’	62,500
2.	1901	Santa Ana	15’	62,500
3.	1901	Southern California 1	60’	250,000
4.	1902	Corona	30’	125,000
5.	1902	Downey (set of two)	15’	62,500
6	1934	Las Bolsas	15’	62,500
7	1935	Garden Grove	7.5’	31,680
8	1935	Newport Beach (set of three)	7.5’	31,680
9	1935	Seal Beach	7.5’	31,680
10	1947	Downey	15’	50,000
11	1950	Anaheim	7.5’	24,000
12	1950	Los Alamitos (set of three)	7.5’	24,000

Item	Year	Topography Quadrangle	Series	Scale
13	1950	Seal Beach	7.5'	24,000
14	1951	Long Beach Vicinity	7.5'	24,000
15	1951	Newport Beach (set of four)	7.5'	24,000
16	1964	Los Alamitos (set of three)	7.5'	24,000
17	1965	Anaheim	7.5'	24,000
18	1965	Newport Beach (set of six)	7.5'	24,000
19	1965	Seal Beach	7.5'	24,000
20	1972	Anaheim	7.5'	24,000
21	1972	Los Alamitos (set of two)	7.5'	24,000
22	1972	Newport Beach (set of six)	7.5'	24,000
23	1972	Seal Beach	7.5'	24,000
24	1981	Anaheim	7.5'	24,000
25	1981	Los Alamitos (set of three)	7.5'	24,000
26	1981	Newport Beach (set of five)	7.5'	24,000
27	1981	Seal Beach	7.5'	24,000

16.0 ENVIRONMENTAL PROFESSIONAL QUALIFICATIONS AND SIGNATURE

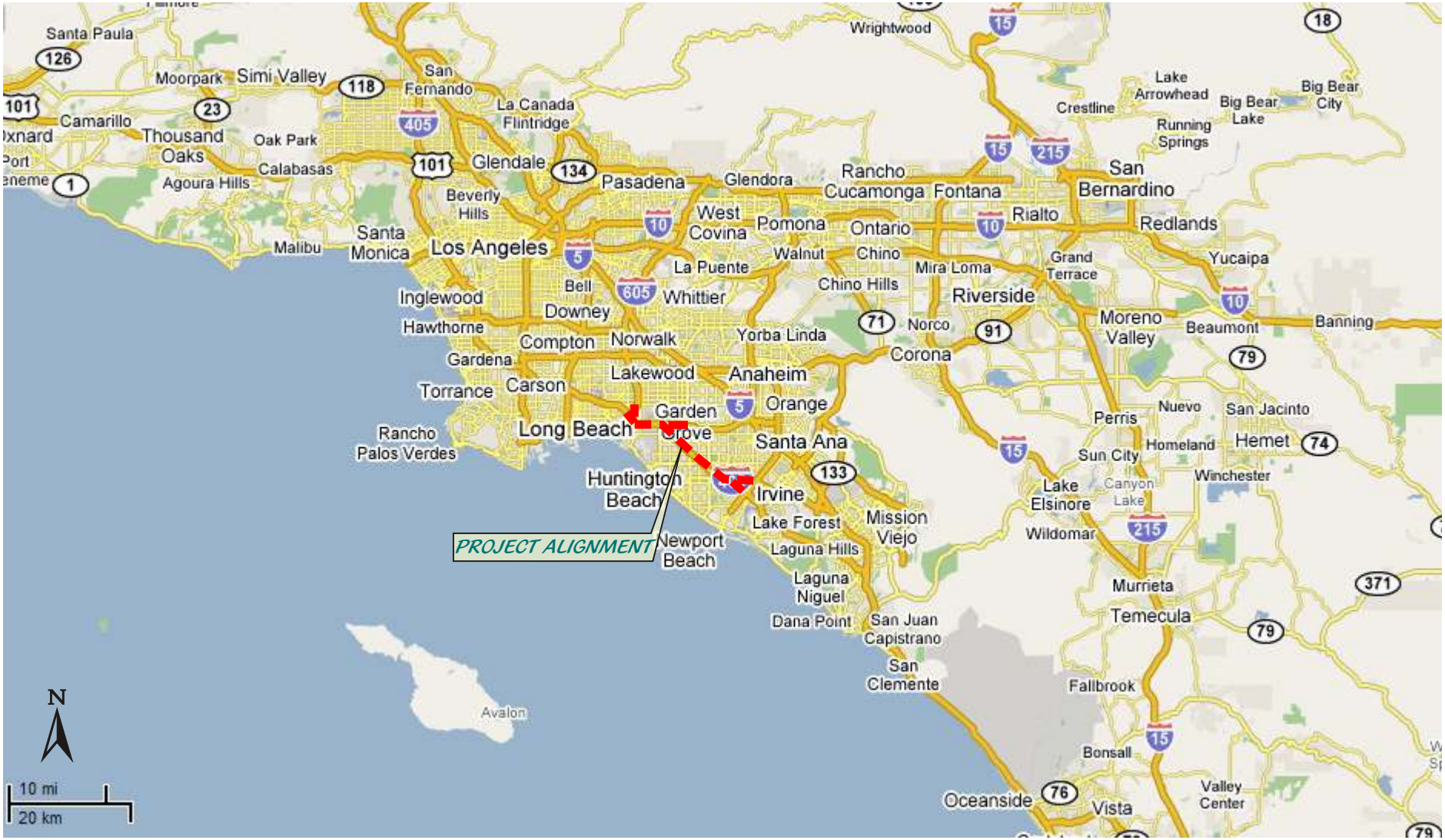
The qualifications of the environmental professional responsible for the ISA are provided in résumé form in Appendix G. As required by 40 CFR 312.21(d) and Section 12.2 of ASTM 1527-05, the environmental professional's statement and signature are provided below. In support of the contents of this report:

I, declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental professional as defined in §312.10 of 40 CFR 312 and I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all-appropriate inquiries in conformance to the standards and practices set forth in 40 CFR Part 312



Opjit S. Ghuman, CE 23839 exp 12/31/2010

FIGURES



The base map is from Google Maps

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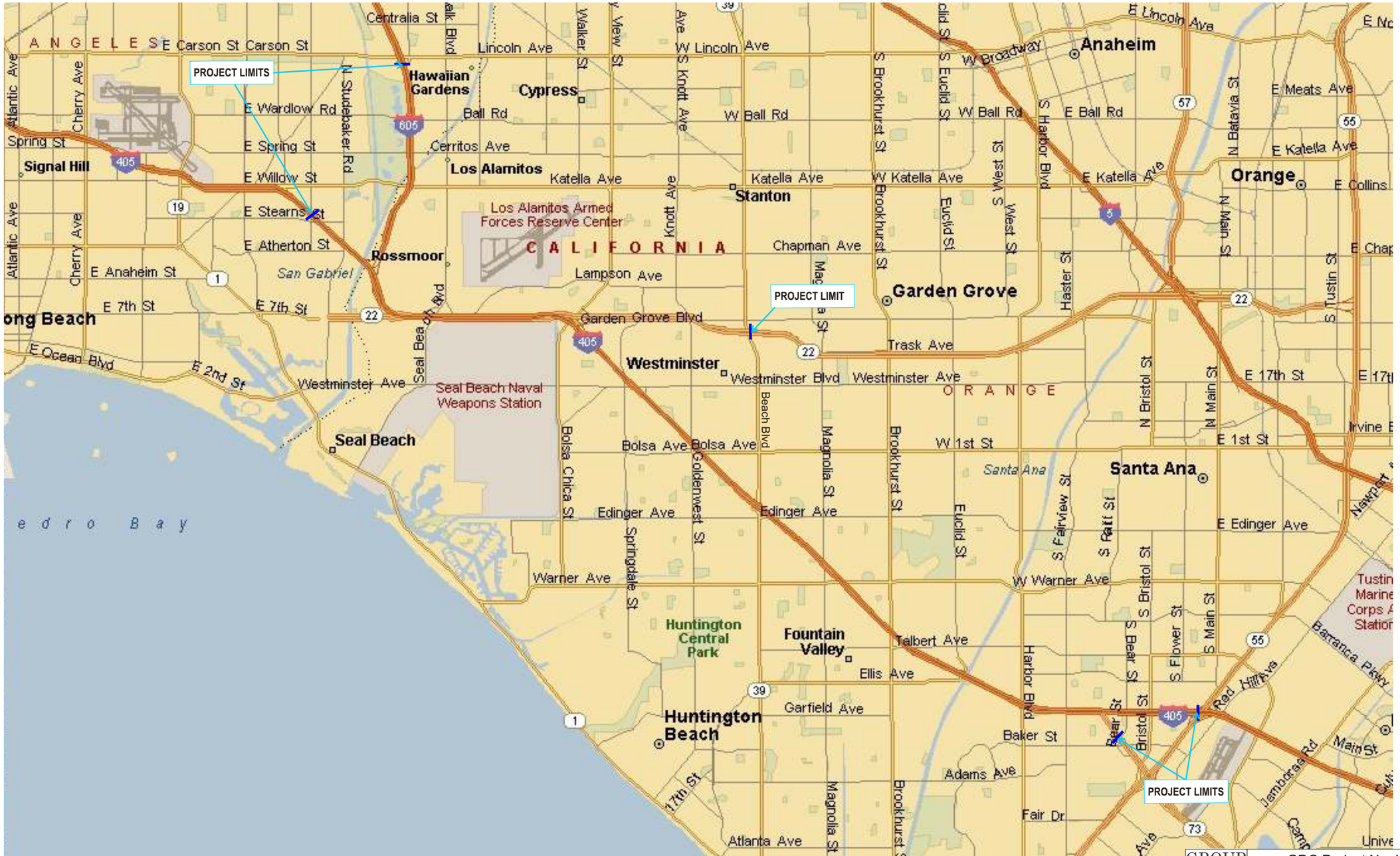
from SR-73 to I-605

Site Vicinity Map

Figure 1



Ref. Base map is from Microsoft's Streets and Trips

N

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Corridor Map

Figure 2

Unit Descriptions

Qyf - Younger Fan Deposits - Sand & Gravel, Sand, Silty Sand
Qya - Younger Alluvium - Silty Sand, Sand, Minor Gravel

Ref. : CGS Seismic Hazard Zone Report for the Anaheim and Newport Beach 7.5-minute Quadrangles 1997
CGS Seismic Hazard Zone Report for the Seal Beach 7.5-minute Quadrangle 1998
CGS Seismic Hazard Zone Report for the Los Alamitos 7.5-minute Quadrangle 1998

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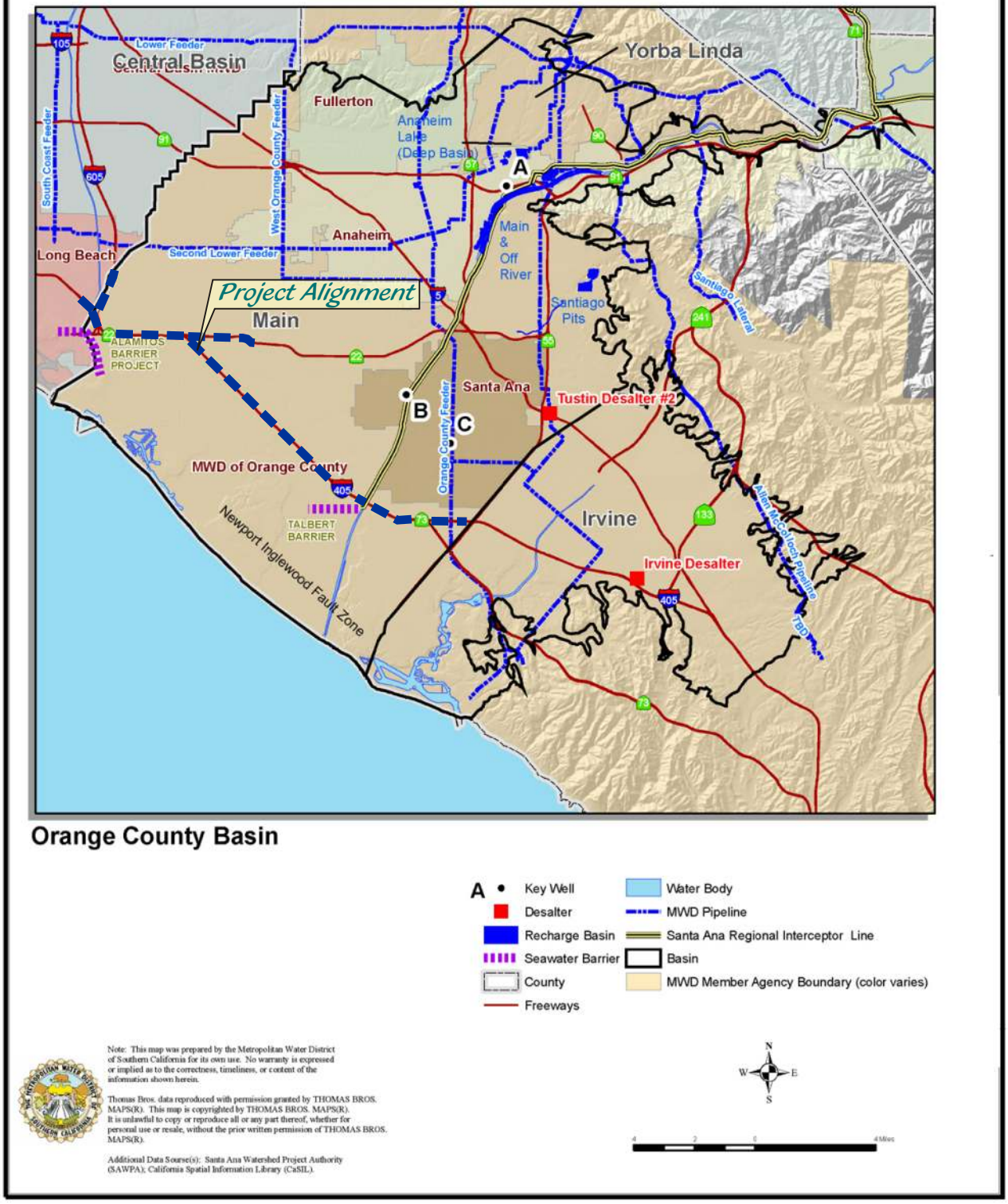
Geologic Map

Figure 3



Note: This map was prepared by the Metropolitan Water District of Southern California for its own use. No warranty is expressed or implied as to the correctness, timeliness, or content of the information shown herein.

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Additional Data Source(s): Santa Ana Watershed Project Authority (SAWPA); California Spatial Information Library (CaSIL).

Ref. : Groundwater Basin Reports, Orange County Basins
Metropolitan Water District, 2007

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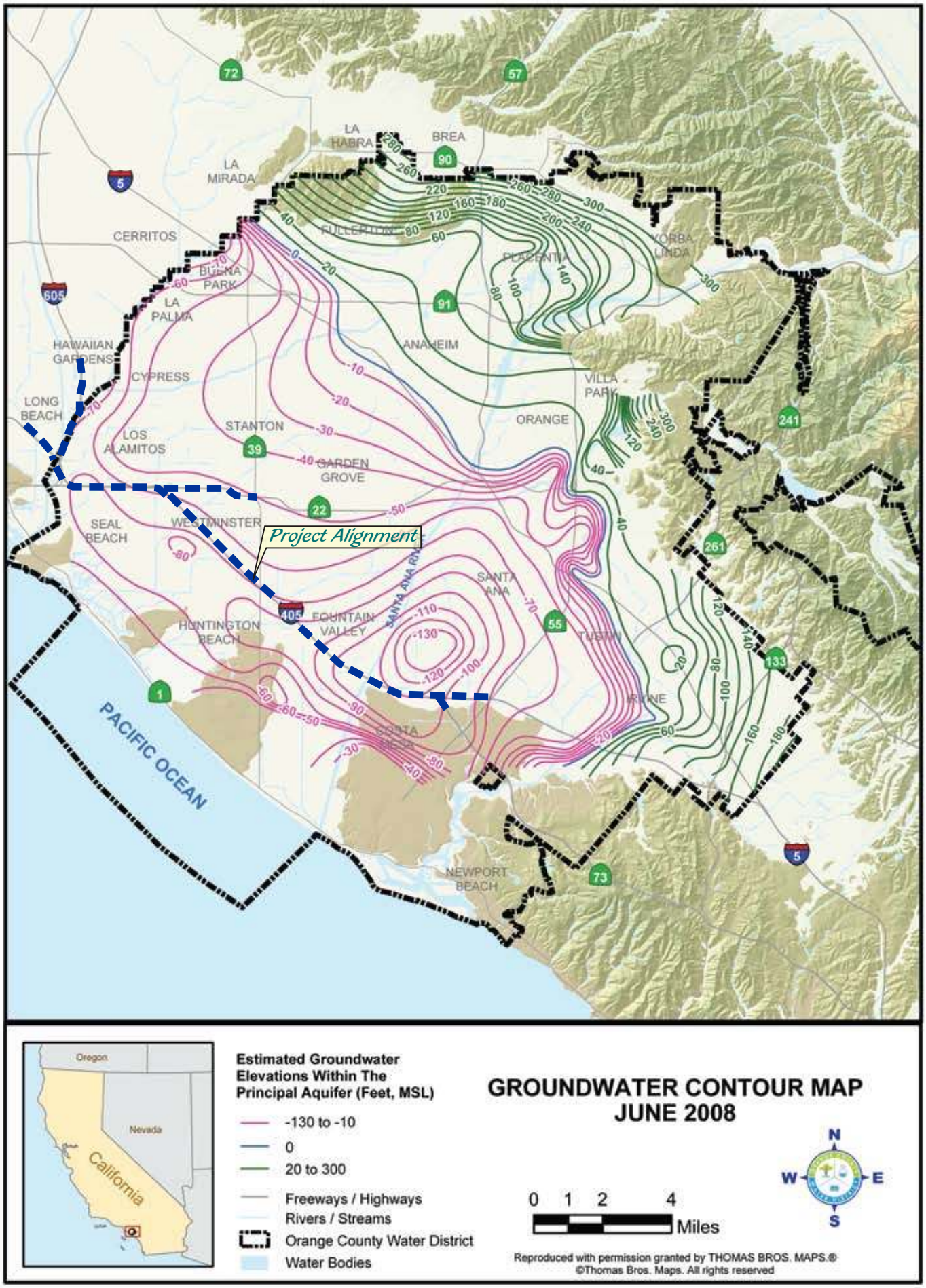
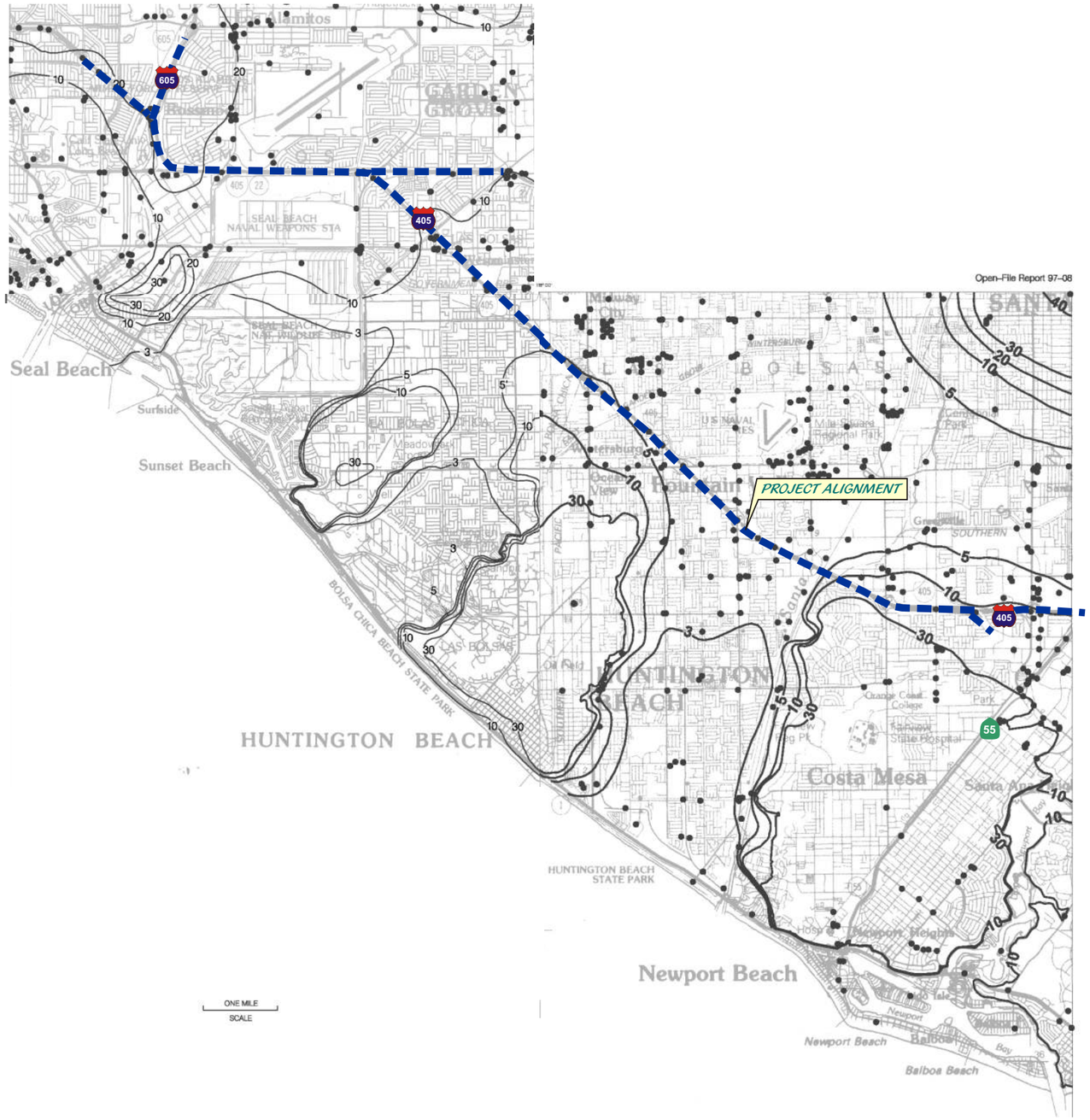
Overview of the Orange County Groundwater Basin

Figure 4



Groundwater Contours for Orange County

Figure 5



N

Not to Scale

Ref. : CGS Seismic Hazard Zone Report for the Anaheim and Newport Beach 7.5-minute Quadrangles 1997
CGS Seismic Hazard Zone Report for the Seal Beach 7.5-minute Quadrangle 1998
CGS Seismic Hazard Zone Report for the Los Alamitos 7.5-minute Quadrangle 1998

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Historic High Groundwater Map

Figure 6

SOURCE: ESRI STREETMAP 2008, EAGLE AERIAL 2008

Disturbance Area

Disturbance Description

- Mainline and Intersection Improvements
- Striping Only
- Potential Improvement Area

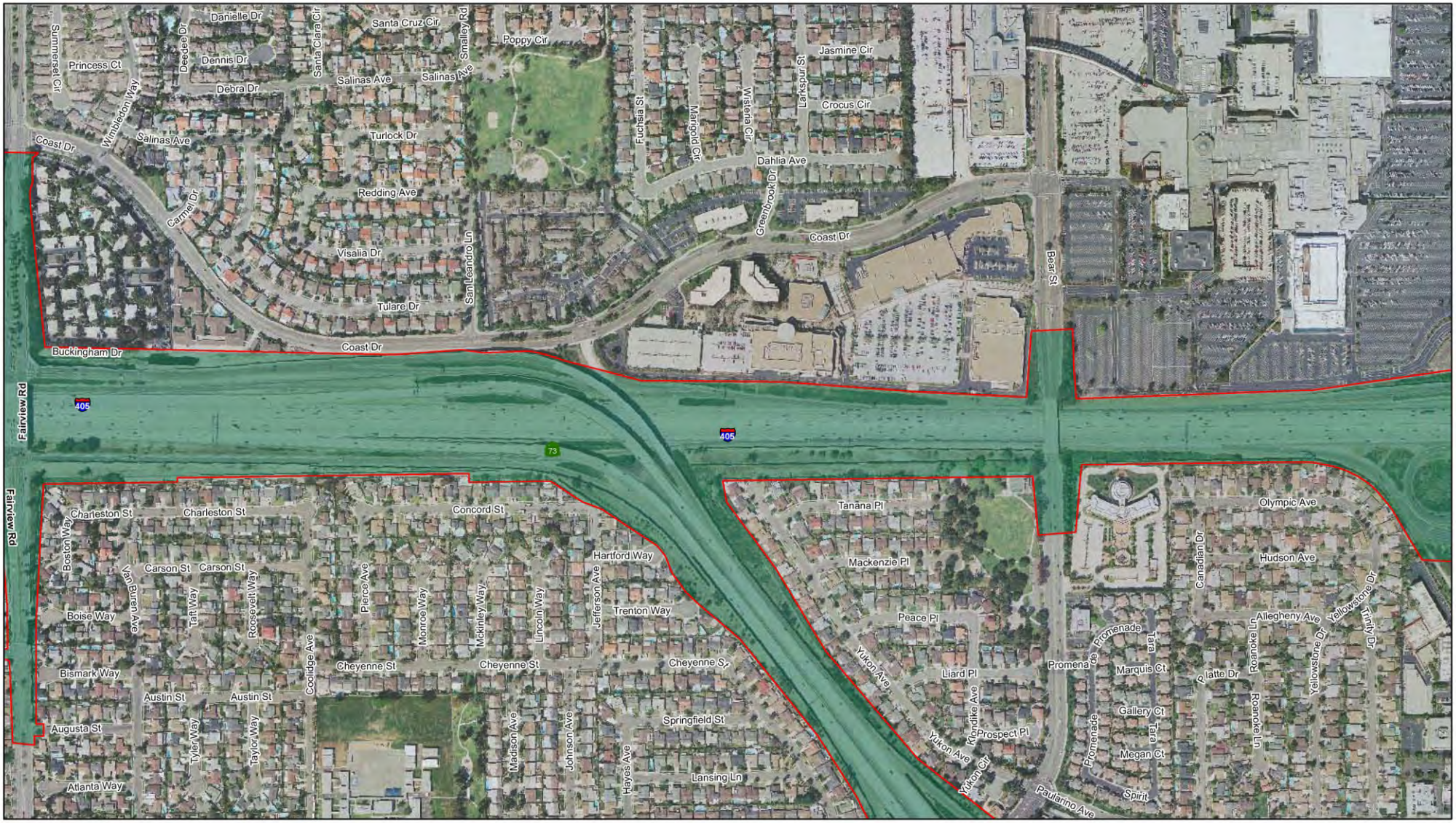
0 250 500 1,000 Feet

N

DRAFT Disturbance Area Map
Figure ID: I-405a

1

Figure 7-1



SOURCE: ESRI STREETMAP 2008, EAGLE AERIAL 2008

Disturbance Area

Disturbance Description

- Mainline and Intersection Improvements
- Striping Only
- Potential Improvement Area

0 250 500 1,000 Feet

N

DRAFT Disturbance Area Map
Figure ID: I-405b

2

Figure 7-2


SOURCE: ESRI STREETMAP 2008, EAGLE AERIAL 2008
Disturbance Area
Disturbance Description
Mainline and Intersection Improvements
Striping Only
Potential Improvement Area
0 250 500 1,000 Feet
LEGEND
1 Newport-Mesa Unified School District (LUST)
DRAFT Disturbance Area Map
Figure ID: SR-73a
3

Figure 7-3

SOURCE: ESRI STREETMAP 2008, EAGLE AERIAL 2008

0 250 500 1,000 Feet

N

Disturbance Area

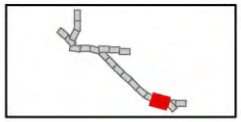
Disturbance Description

- Mainline and Intersection Improvements
- Striping Only
- Potential Improvement Area

LEGEND

3 Mobil #18-HDR (LUST)

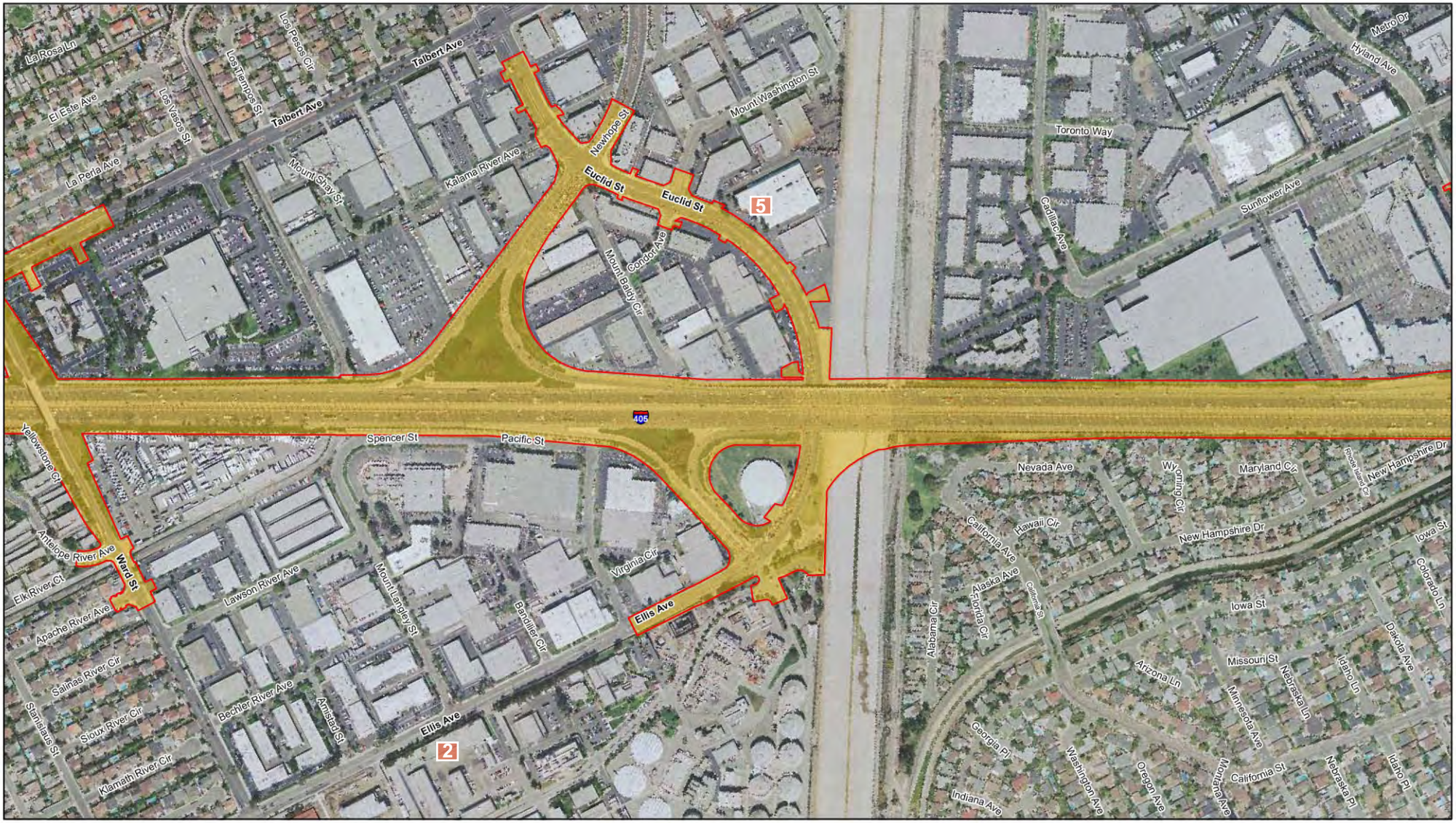
4 Los Angeles Times - South Tanks (LUST)



DRAFT Disturbance Area Map
Figure ID: I-405c

4

Figure 7-4



SOURCE: ESRI STREETMAP 2008, EAGLE AERIAL 2008

0 250 500 1,000 Feet

Disturbance Area

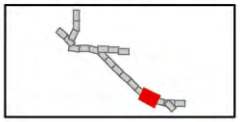
Disturbance Description

- Mainline and Intersection Improvements
- Striping Only
- Potential Improvement Area

LEGEND

2 OCSD Auto Shop (LUST)

5 Kodak Professional Laboratory (SLIC)



DRAFT Disturbance Area Map
Figure ID: I-405d

5

Figure 7-5